SOME ENTOMOLOGICAL AND OTHER BIBLIOGRAPHIES.

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"How index-learning turns no student pale, Yet holds the eel of science by the tail."—POPE.

Bibliography to some is mere drudgery, an ever present and unavoidable evil; to others, however baffling it may be at times, it is an always interesting and fascinating pastime. To all students and workers in every field of interest and research, and especially for all writers, it is an aid and safeguard of extreme importance. The collector of books must study the subject for his guidance and protection while the financial and other success of the bookdealer depends very largely upon his bibliographical equipment. It is said that the largest order for books ever executed was given by Barney Barnato to Selfridges of London—for two copies, printed or typewritten, of every book mentioned in Gibbon's History of the Roman Empire. The list of these citations is an extensive bibliography.

Owing to their great importance as works of reference, bibliographies are perhaps, as a class, the most uniformly valuable of books, in a money sense, when one considers their actual cost of production (exclusive of time!) usually without any expense for plates or other illustrations. Even those relating to the least popular subjects are always in demand and often hard to obtain, being constantly used by their original or present owner, and seldom parted with; they are frequently "reserved" when a library or lot of books is sold.

Of the many general bibliographies, the "Manuel de Libraire" by J. C. Brunet is the one perhaps most often consulted and mentioned. Six volumes of this work were issued, 1860-1865, and two supplementary volumes in 1878 and 1880. The entire set has been reprinted in recent years and the reprint can be had at a moderate price. The earliest bibliographies of natural history known to me are the "Bibliotheca Animalis" by F. C. Bruckmann, a 12mo of 277 pages with an index of (56) pages, published at

Wolfenbuttel in 1743, and the "Bibliotheca Regni Animalis atque Lapidei" by L. T. Gronovius, published at Lugduni Batavorum in 1760, the latter a rather imposing quarto of 326 pages. Both are interesting historically, though neither is of practical use at this time. Agassiz's "Bibliographia Zoologiæ et Geologiæ", in four octavo volumes, published by the Ray Society of London, 1848-1854, is a well known general catalogue of "all" books, tracts and memoirs on these subjects, many titles of which could have well been omitted. The work is by no means as important as its title and subtitle, and the names of its author and publishers would indicate.

The first great natural history bibliography to appear in the nineteenth century was the "Bibliotheca Historica Naturalis" of W. Engelmann, of which the first volume, covering the period 1700-1846, was published in Leipzig in 1846. A "Supplement Band", in two volumes, covering the years 1846-1860 and edited by J. V. Carus and W. Engelmann, appeared in 1861, and the period 1861-1880 is being covered by O. Taschenberg in a second supplementary series, the first signatures of which were published in 1886. To the end of 1923 eight volumes of the Taschenberg series, containing 6,620 pages have appeared, and "the end is not yet". This work is extensive, carefully subdivided and thoroughly indexed, and after a little practice its use is not nearly so complicated as it seems to be at first. It is in fact with but one possible exception the most important of all zoological bibliographies for the period 1700-1880.

Some of the best bibliographies are the catalogues of books contained in libraries of various institutions and societies. At least two of these are of great value in the field of natural history: The "Index Catalogue of the Surgeon General's Library" of the United States War Department, consisting so far of about forty volumes (First Series, 1880-1895, in sixteen volumes; Second Series, 1896-1916, in twenty-one volumes; Third Series begun in 1918), is an index by authors and by subjects of this library (in Washington, D. C.) of over 300,000 bound volumes, about 1,500 serials, and almost 500,000 pamphlets, a great many of which are of interest to entomologists and other naturalists.

By far the best of all natural history bibliographies is the "Catalogue of Books, Manuscripts, Maps and Drawings in the British Museum [Natural History]", in five quarto volumes, issued 1903-1915, and supplementary volume six (A-1) issued 1922, the six volumes containing in all some 3,000 pages closely but clearly printed in double column, chock-full of important facts and details as to plates, pagination, etc., where many of these library catalogues merely cite the date and place of publication and the size of the volume. Words fail to express the great worth of this excellent bibliography.

Some of the large libraries publish card indexes of their books on various subjects. The Library of Congress does, and so does The John Crerar Library of Chicago. These cards may be conveniently used as a nucleus for the worker's own detailed bibliographical card catalogue. Although the unit price of these cards is very reasonable, the vast number of titles makes the total cost on any subject quite considerable.

The Index Catalogue of Medical and Veterinary Zoology by C. W. Stiles and Albert Hassall is a valuable bibliography, by authors, published 1902-1910 in thirty-six parts, with 2,766 pages, as Bulletin 39 of the Bureau of Animal Industry, United States Department of Agriculture. Another very important bibliography is the "Catalogue of Scientific Papers" issued 1800-1900, published by the Royal Society of London, 1867 to date, in eighteen quarto volumes, the last one published (1923) finishing letter S of the Fourth Series.

There are at least three valuable bibliographies of serial publications: Scudder's "Catalogue of Scientific Serials (1633-1876)" issued as Special Publication Number One (1879) of the library of Harvard University; H. C. Bolton's "Catalogue of Scientific and Technical Periodicals" (1665-1895) published (second edition, 1897) by the Smithsonian Institution; and the "Handbook of Learned Societies and Institutions in America", this last being Publication 39 (1908) of the Carnegie Institution of Washington. In June, 1923, the London book dealers, Wheldon and Wesley, issued a priced catalogue (New Series, Number 7) which is a complete list of the many titles on natural history published by

the British Museum down to that time. Similarly, in 1911, the Engelmann house, the great German publishers of scientific works, issued a "Jubiläums Katalog" listing all of its own publications during its existence of one hundred years, with a lot of valuable information about them.

Beginning 1835, the "Archiv für Naturgeschichte" has one volume each year giving the titles of the publications of that year relating to natural history (1835-1911; "Zweiter Band, Bericht über die leistungen im gebiete der naturgeschichte". 1912 to date; "Abteilung B. Jahres-Berichte"). This work and the similar "Zoological Record" issued annually since 1864 by the Zoological Society of London, both carefully subdivided as to subjects, give not only a very complete list of titles with pagination, etc., but also an exhaustive digest of their combined contents systematically arranged. One must refer constantly to either one or the other, or both, of these records. Of the two, the "Zoological Record" is preferred by most English speaking people, and it is to be hoped that zoologists will give it the support necessary for its continuance. Volume 59, for 1922, is being published and the later volumes are in course of compilation. The Zoological Society of London, though willing to lose as much as £500-a-year on this undertaking, feels that the balance of its cost must be met by other organizations and individuals. The "Insecta" portion is of course by far the most extensive part of the work, and it should be subscribed for by every working entomologist, both professional and amateur.

The "Zoologischer Jahresbericht" of the Zoological Station at Naples, begun in 1879, and edited at first by J. V. Carus, was maintained for several years. In this work under each subject is a list of titles followed by a general resumé of the literature with references to the various titles giving a general idea of each one. This is considered by some to be an ideal bibliographical record. The Zoologischer Anzeiger, 1878 (Volume 1) to 1895, also contains a "Litteratur—uebersicht",, an annual record of publications, which, beginning 1896, has been continued as "Bibliographia Zoologica", both in book form and also as a card catalogue (part of Concilium Bibliographicum) edited by J. V. Carus and (after-

wards) H. H. Field, giving on cards the same information contained in the "Zoological Record" and "Archiv für Naturgeschichte". Friedlander's "Naturae Novitates", instituted in 1879 by the great German booksellers, is a very useful record of publications as they appear, and the similar "Bibliotheca Historico-Naturalis et Physico-Chemica (et Mathematica) edited by E. A. Zuchold was issued semi-annually, 1851-1888, being distributed by B. Westermann & Co. of New York City and other foreign booksellers.

Coming to strictly entomological bibliographies we at once think of Hagen's "Bibliotheca Entomologica" published by Engelmann in 1862, a model work in every respect with its great attention to detail and copious index. The inestimable value of this work is being forcibly expressed in a rapidly advancing money value, and it has become so scarce and it is so essential that it will undoubtedly some day be reprinted. Although many additions and corrections have been published by various writers, and although Hagen's own copy in the Museum of Comparative Zoology at Cambridge is literally honeycombed and greatly enlarged with such corrections and additions, the work is marvelously accurate and complete. Those laconic (and expensive) words—"Not mentioned by Hagen" and "Not in British Museum Catalogue"-sometimes quoted by the delighted book dealer or bibliophile are eloquent tributes to the surpassing excellence of these two great bibliographies.

It would be interesting to have a complete list of the printed additions and corrections to Hagen's work. Those known to me are "Addenda und Corrigenda", by Dr. K. W. von Dalla Torre, in Entomologische Nachrichten (Vol. 4, 1878, pages 324-330; Vol. 6, 1880, pages 125-129, 137-140, 168-171, 261-267; and Vol. 7, 1881, pages 45-48, 163-170); "Ergänzungen und Nachtrage", by Dr. G. Kraatz, in Berliner Entomologische Zeitschrift (Vol. 18, 1874, pages 209-226); "Zusätze und Berichtigungen", by Prof. Dr. H. M. Schmidt-Gäbel, in Deutsches Entomologische Zeitschrift (Vol. 20, 1876, pages 145-160); and "Contributions to Entomological Bibliography up to 1862", by Albert Müller (No. 1 in Transactions Entomological Society of London, 1873, pages

207-217, and Nos. 2 and 3, of 15 and 16 pages respectively, separately published by E. W. Janson, London, also in 1873).

Another valuable and interesting entomological bibliography not so well known and by no means so useful as that of Hagen was published in Paris twenty-five years earlier (1837). This "Bibliographie Entomologique" by A. Percheron is also in two volumes and, although lacking entirely the details of the Hagen work, it contains several interesting features, such as the chronological tables of works on various subjects and the seventy-fivepage list of anonymous titles. It is one of the earliest of the modern bibliographies of natural history, antedating the Engelmann and Agassiz general works by about ten years. A still earlier entomological bibliography, seldom seen, is the "Bibliographie Entomologique" by Charles Nodier, published in Paris, "An I" (1801). It is a 16mo of 8 and 24 pages. The author was born in 1783 and there is a note in Hagen that he made a great effort to recall this youthful production. There is a copy of it in the Library of Congress. The "Lexicon der Entomologischen Welt, der Carcinologischen und Arachnologischen", "addressenbuch, etc.," published at Stuttgart, 1846, is a semi-bibliographical work of 144 pages, a sort of an entomological "Who's Who". The author is Johannes Gistel. An unimportant but curious attempt at entomological bibliography, contributed by Dr. Wm. Sharswood of Philadelphia, is the "Bibliographia librorum entomologicorum in America boreali editorum", found in Linnæa Entomologica, Vol 13, 1859, pages 333-353, and Vol. 14, 1860, pages 256-264. Another project of Dr. Sharswood-carried out many years later by the Boston Society of Natural History-was the idea of publishing under one cover a collection of the entomological writings of Thaddeus William Harris, and advertising prospectuses of this work appeared in various entomological journals of the period.

The Catalogue of the Library of the Entomological Society of London (1893, 312 pages) with the Supplementary Catalogue (1900, 147 pages) does not profess to be anything more than a catalogue, but it cites very faithfully the name of the serial, with the date and volume number, in which a great many papers ap-

peared. A very valuable entomological bibliography published in our own country is the "Catalogue of Publications relating to Entomology in the Library of the United States Department of Agriculture" (Bulletin 55 of the Library, U. S. D. A.) prepared under the direction of the librarian, Josephine A. Clark, and published in 1906. This is a volume of 562 pages, and gives under each title full and exact details of size, pagination, method and place of publication, and numerous remarks and annotations. The titles are given in many sub-divisions, including an arrangement by families under each order, with a complete author index and index by families, each index including all the titles under one alphabet.

Our government, especially through the Bureau of Entomology of the Department of Agriculture, has published not only many entomological books and papers, but also several valuable entomological bibliographies. In addition to the one just mentioned there is, first and foremost, the "Bibliography of American Economic Entomology" prepared by Samuel Henshaw and Nathan Banks and published, 1889-1905, in eight parts, with 1,318 pages. This work, now thoroughly "out of print", has been continued by the American Association of Economic Entomologists in its "Index" volumes covering (I, by Nathan Banks) the years 1905-1914, and (II, by Miss Mabel Colcord) the years 1915-1919. These later "Index" volumes are arranged according to species of insects and not by authors' names.

Bulletin 19 (1888) and New Series, Bulletins 24 (1900) and 81 (1910) of the Bureau of Entomology are three editions of a "List of Publications relating to the Entomology of North America". The first of these is by Dr. E. A. Schwarz, who has always been, and still is, one of our best informed authorities on the bibliography of entomology. The later editions were prepared by Nathan Banks. Circular 76, New Series, of the Bureau of Entomology, gives a list of the publications of the Bureau revised to February 1st, 1910. Miss Colcord has brought this list down to date, but her manuscript has not yet been published. In the Proceedings of the Entomological Society of Washington, Vol. 25, No. 1 (January, 1923) my friend Joe S. Wade gives a very useful collation and

check-list of all the various serial and other government publications of entomological interest.

Such works as the Aldrich "Catalogue of North American Diptera" (1905), faithfully modeled after the second edition (1878) of the Osten Sacken catalogue, the Van Duzee "Catalogue of Hemiptera of North America" (1917), the Leng "Catalogue of the Coleoptera of America, North of Mexico" (1920), and the monumental Catalogus Hymenopterorum by K. W. von Dalla Torre (in ten volumes, 1892-1902), are of course primarily bibliographical works. The Aldrich Catalogue, for example, contains an annotated list of titles occupying some seventy pages, while the Leng Catalogue has a separate bibliography of over 4,000 titles (pages 367-444). Two American entomological bibliographies are expected to appear during the coming year: an annotated bibliography of works relating to the Hemiptera-Heteroptera of North America, by Prof. H. M. Parshley, of Smith College; and Prof. Z. P. Metcalf's bibliography of works relating to North American Hemiptera-Homoptera.

Nearly every comprehensive entomological book of real merit contains a lot of bibliography. Even the early naturalists did not neglect to give due credit to the works of their predecessors and contemporaries: e. g., Linné in the first edition (1746) of his "Fauna Suecica" mentions forty books on insects. There is to be sure one notorious exception to this custom in the case of J. C. Schaeffer, who in his "Elementa Entomologica" (1766) and the appendix thereto (1777) fails to mention the name or work of any other authority. In Lowne's great work on the Blow Fly (1890-1895) there is a bibliography for each chapter. Our own Prof. W. M. Wheeler in his recent book, "The Social Life of Insects", devotes pages 285-355 to an invaluable annotated bibliography.

There is in existence in this country at least one very complete *unpublished* entomological bibliography—the very extensive card catalogue of over 3,900 works on Orthoptera prepared and maintained by A. N. Caudell. Dr. Bequaert has a similar cardindex of literature on Hymenoptera and Diptera. There are many other manuscript entomological bibliographies, many of which are

mentioned in publication number 45 of the "Reprint and Circular Series" of the National Research Council.

R. Friedländer and Son, of Berlin, dealers, issued monthly, 1900-1914, an extremely useful "Entomologische Litteraturblatter" giving the current publications, including those appearing in the various serials. Beginning 1913 we have had the "Review of Applied Entomology" published monthly by the Imperial Bureau of Entomology, London, in two "Series", "Agricultural" and "Medical". This is far more than a bibliography. It is a digest of the contents of nearly every entomological work of the slightest agricultural or medical interest, so that a great many of the systematic publications are also included. Our own "Entomological News" has in each issue a long classified list of items relating directly or indirectly to our North American fauna. The early volumes of "Psyche" were "strong" on bibliography, but the result was entirely too complicated to be of much use.

It is frequently desirable to know just what titles are contained in important serials. A common feature of German and other entomological serials in years gone by was the "Repertorium" of entomological contents of various periodicals, very often starting with the year 1862 (date of Hagen). In the case of such serials as the "Proceedings of the Academy of Natural Sciences of Philadelphia", the "Proceedings of the United States National Museum", the "Proceedings of the Zoological Society of London", the "Annales de Societé Entomologique de France", etc., when obtainable I bind together either the regular "contents" or those printed on the covers, supplying those missing in manuscript. If the "contents" as printed are not to be had, it is often worth while to make up a card catalogue of the contents of the various volumes. Biographies and obituary notices of distinguished entomologists are not to be overlooked in the search for bibliographical information. They are among the most valuable "sources".

A few insects of great economic importance, such as the silk-worm and the honey bee, have such an extensive bibliography that it is practically impossible for it to be included in general works. The French government undertook the publication of a bibliography of literature relating to the "Phylloxera", but found

it to be so extensive that after a few volumes the work was abandoned.

There should be mentioned finally, as very often of extremely great bibliographical value, the regular priced catalogues issued by certain book dealers, notably those of the type originating I believe in Germany cataloging not only the important books, but also thousands of brief pamphlets and excerpts, giving in some cases the details of pagination, etc., and the entirely different catalogues of the English house of Quaritch—the greatest of all book dealers—whose catalogues, besides giving an absolutely accurate description of the books which they offer for sale, are always overflowing with important and fundamental facts relating to them. The 1881 Quaritch catalogue, issued in many sections, and printed both in octavo and in quarto size, is an early example of these wonderful catalogues which continue always to improve, and which are thoroughly satisfying works of reference both for the bibliophile and for other dealers. They are indeed models for the inspiration and emulation of the latter, and may well be studied and followed by all in the preparation and study of bibliographies.

MELANOPLUS DIFFERENTIALIS (THOMAS) A NEW GRASSHOPPER TO THE STATE OF NEW YORK.

On August 30, 1924, a male of this species was found in the salt meadow among rank vegetation near Old Place on the north shore of Staten Island. The first specimens to be reported from the eastern United States appear to have come from cranberry bogs in New Jersey and are mentioned in the second "List of the Insects of New Jersey" by Prof. J. B. Smith. In the vicinity of Philadelphia others were found by Wenzel, Kemp and Seiss in 1896. (See notes on this species by James A. G. Rehn in the Canadian Entomologist for January, 1900.) In 1908 differentialis was collected near Dennisville in southern New Jersey by the writer, and later it was taken at the same locality by Dr. Henry Fox. It is a very common species over most of the western states where it is sometimes destructive. It appears to be spreading along the Atlantic coast both to the north and south of Philadelphia.

WM. T. DAVIS.